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ABSTRACT

Over the years, the decennial census and the Current Population Survey have been major sources of essential data to and about workers in specific occupations. In the 1970s, the database of employment projections shifted from the census to the Occupational Employment Statistics (OES) survey program. For various reasons, the National Occupational Information Coordinating Committee/State Occupational Information Coordinating Committees (NOICC/SOICC) Network has adopted the OES as the database for current employment estimates and projections of demand requirements for use in state occupational information systems. However, data from the census remain essential in estimating and projecting occupational employment. The NOICC/SOICC Network's needs for occupational information from the 1990 census were reviewed and compared with Census Bureau plans for collecting, tabulating, and delivering occupational data from the 1990 census. On the basis of that review, the following data elements were identified as top-priority data elements needed by the NOICC/SOICC network: detailed occupations of employed persons by industry and class of worker; occupation of employed persons by age and sex for states and territories; occupation (full detail) of employed persons by state, territory, and metropolitan statistical area; and occupation of employed persons by industry and race. Medium- and low-priority data elements were also identified. (MN)

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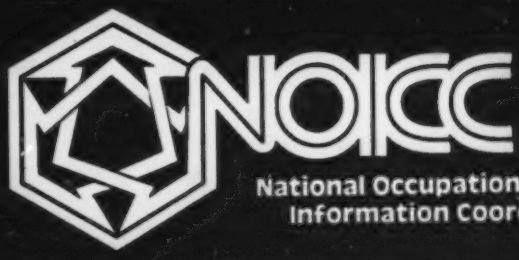

National Occupational
Information Coordinating Committee

Occasional Papers

An Appraisal of NOICC/SOICC Needs for Data from the 1990 Decennial Census

Richard E. Dempsey

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Toward improving communication and coordination among developers and users of occupational, career, and labor market information

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NOICC Occasional Papers/2

An Appraisal of NOICC/SOICC Needs for Data from the 1990 Decennial Census

Richard E. Dempsey

February 1991

The NOICC/SOICC Network

The National Occupational Information Coordinating Committee (NOICC) promotes the development and use of occupational and labor market information. It is a federal interagency committee, established by Congress in 1976. Its members represent nine agencies within the U.S. Departments of Labor, Education, Commerce, Agriculture, and Defense.

NOICC has two basic missions. One is to improve communication and coordination among developers and users of occupational and career information. The other is to help states meet the occupational information needs of two major constituencies: 1) planners and managers of vocational education and job training programs and 2) individuals making career decisions.

NOICC works with a network of State Occupational Information Coordinating Committees (SOICCs), also established by Congress in 1976. SOICC members represent state vocational education boards, vocational rehabilitation agencies, employment security agencies, job training coordinating councils, and economic development agencies. Many also include representatives from higher education and other state agencies.

The NOICC/SOICC Network supports a variety of occupational information programs and systems. Some provide data to help in planning vocational education and job training programs. Others offer information for individuals who are exploring occupational options and making career decisions.

Organizations and individuals undertaking special projects funded by the National Occupational Information Coordinating Committee are encouraged to express their professional judgments. The analysis, interpretation, and opinions expressed in this document, therefore, do not necessarily represent the official position or policy of NOICC members or their representatives, or the NOICC staff, and no official endorsement should be inferred.

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Although these individuals were especially helpful, the author alone is responsible for the views presented in this paper. The report was edited by Roberta Kaplan and produced by the Northwest Regional Educational Laboratory in Portland, Oregon, for the NOICC Training Support Center.

Foreword

The oldest source of data on the American work force has been the decennial census, taken for the first time in 1790. In the past, for example, the census has told us how many Americans were working as bricklayers, secretaries, or teachers — how old they were, what they earned, their sex, and their race. Newer data collection programs that focus specifically on labor market information have been established; but the census continues to play an important role in the development of occupational information. With the 1990 Decennial Census approaching, NOICC asked Richard Dempsey to look at plans for this census in relation to the NOICC/SOICC Network's need for data.

Mr. Dempsey's work on this project draws on his extensive experience with the use of census data in occupational information systems and in developing employment projections at the Bureau of Labor Statistics and NOICC. His findings were presented at our national technical conference in St. Louis, Missouri, in October 1989. The following paper, the second of this series of occasional papers, is Mr. Dempsey's final report of his research.

NOICC's mission places it at the center of the growing network of producers and users of occupational information. For more than a decade, we have provided a forum for data producers and users to exchange information and explore ideas of mutual concern. Our role as a coordinator gives us a unique opportunity to identify key issues and developments and to call attention to them through our programs and publications.

This series of occasional papers provides the NOICC/SOICC Network with another means of sharing information about important innovations and issues concerning the production or use of occupational, career, and labor market data. The series is part of a larger effort to support activities of the Network through the services of the NOICC Training Support Center. We hope you will find the series informative and useful.

Juliette N. Lester
Executive Director

The Author

Richard E. Dempsey was one of the first coordinators of the National Occupational Information Coordinating Committee and a member of the federal agency team that organized NOICC in 1977. During his years there, he provided leadership in research, development, and implementation of occupational information systems and the use of microcomputers for information delivery, especially for educational program planning.

Mr. Dempsey came to NOICC after a long and distinguished career in the Bureau of Labor Statistics. Among other assignments, he served as chief of the branch of skilled manpower and industrial employment studies. Subsequently, he was coordinator of the Bureau's "Tomorrow's Manpower Needs" studies. That program, conducted jointly with state employment security agencies, prepared projections of employment by industry and by occupation for state and local labor markets. As its coordinator, he initiated efforts to prepare and format projections for special user groups, such as administrators and planners of vocational programs.

In 1986, under the auspices of the U.S. Agency for International Development (USAID), Mr. Dempsey became the national manpower development planner for the Ministry of Finance and Development Planning of Botswana. More recently, he has conducted various occupational, career, and labor market information studies for USAID in Belize and for the World Bank/International Labour Office in Hungary and Turkey.

An Appraisal of NOICC/SOICC Network Needs for Data from the 1990 Decennial Census

Richard E. Dempsey

1. Introduction

Over the years, the decennial census and the Current Population Survey have been a major source of essential data on the number of workers employed in specific occupations. The census also has provided a wide variety of information about the characteristics — such as the age, sex, race, and income — of workers in the occupations.

Decennial census data were especially important at the state and local levels, where no other comprehensive source of occupational employment data was available to estimate current employment and to project employment demand. When the "industry/occupational employment matrix" approach was introduced in the late 1950s, the census became the principal source of data in the employment projection process.

During the 1970s, the employment database of the projections shifted from the census to the Occupational Employment Statistics (OES) survey program. This program, conducted jointly by the Bureau of Labor Statistics (BLS) and the state employment security agencies (SESAs) provides the most up-to-date, accurate, detailed, and area-specific data available on employment by occupation. For these reasons, the OES has been adopted by the NOICC/SOICC Network as the database for current employment estimates and projections of demand requirements for use in state occupational information systems (OIS). Today, the OES has replaced the census as the *primary* source of estimates of current occupational employment.

However, data from the census continue to play an essential role in estimating and projecting occupational employment. In a number of important areas, the OES data need to be supplemented by census information. For example, the OES is not designed to cover employment in agriculture or of self-employed workers. Neither does the OES program currently collect information on the characteristics of workers employed in the

occupations. Thus, in the immediate years ahead, the decennial census will continue to be a unique source of information on occupations.

To insure the availability of these data for use in the development and updating of state occupational information systems, close cooperation between NOICC and the Census Bureau will be necessary. The purpose of this project was to assist in the coordination process.

The Project

The purposes of this project were to:

1. identify the NOICC/SOICC Network's needs for occupational information from the 1990 census;
2. explore Census Bureau plans for the collection, tabulation, and delivery of occupational data from the 1990 census;
3. compare Census Bureau plans with NOICC/SOICC census data needs; and
4. recommend actions that NOICC might take to insure the timely availability of 1990 census data.

Specific Occupational Areas Reviewed

In keeping with these purposes, this project examined the needs for occupational employment data and related characteristics information from the 1990 census. Special attention was given to the data needed for preparing projections of occupational demand for states and local geographic areas. Other occupational and career information delivery system needs also were examined.

Specific information areas reviewed by this project were:

1. Detailed occupation of employed persons (national, state, metropolitan statistical area [MSA])
2. Detailed occupation of the employed by class of worker, i.e., wage and salary workers, self-employed workers, government workers (federal, state, local), and unpaid family workers (national, state, MSA)
3. Detailed occupation of the employed by age (national, state)
4. Detailed occupation of the employed by sex (national, state)
5. Detailed occupation of the employed by race (national, state, MSA)
6. Detailed occupation of the employed by level of education (national, state)

7. Detailed occupation of the employed by detailed industry (national, state, MSA)
8. Detailed occupation of the employed by state of residence in 1985 (state)

Project Development Procedures

To achieve the objectives of this project, the following steps were taken:

1. The availability and use of similar data from the 1980 decennial census were examined.
2. Discussions were held with staff at NOICC and other appropriate federal agencies, such as BLS, the Employment and Training Administration, and the Equal Employment Opportunity Commission.
3. Visits were made to three SOICCs (Delaware, New Jersey, and Pennsylvania), where discussions were held with appropriate state agencies including, for example, SOICC staff, SESA labor market information units, and census data centers. Staff from the National Crosswalk Service Center and the Utah Occupational Projections Service Center were interviewed by telephone.
4. Available 1990 census materials were reviewed, and a number of meetings were held with selected Census Bureau staff members.

Organization of this Report

This report is divided into four sections. Section 1, Introduction (above); Section 2, Occupational Information System Development and the Need for Census Data; Section 3, 1990 Census Bureau Plans for Collecting, Tabulating, and Distributing Occupational Data; and Section 4, Conclusions and Recommendations.

2. Occupational Information Systems and the Need for 1990 Decennial Census Data

Data from the decennial censuses have played an essential and often unique role in the measurement of employment by occupation. Equally, the census has been the prime source of information about the characteristics of the workers employed in the occupations. Such information continues to be of great importance in the development and updating of an OIS.

National and state representatives expressed the following needs for occupational employment and characteristics information from the 1990 decennial census. These needs have been divided into two categories: (a) census data needed to develop projections of occupational employment requirements and (b) other OIS-related census data.

Census Data Needed to Project Occupational Employment

Sections A and B (below) discuss the historical role of census data in the preparation of occupational employment projections and examine the continuing need for census information in these important areas.

A. Detailed Occupation of the Employed by Detailed Industry and Class of Worker

Until the introduction of the OES program, data from the decennial censuses were the primary source of occupational employment estimates for many decades. At the national level, employment data from the census and the Current Population Survey provided the database that was used in preparing projections of occupational employment demand. The use of census data for this purpose began in the 1950s and continued into the early 1980s.

During the 1950s, the "industry/occupational employment matrix" was introduced as a tool for preparing projections of occupational employment at the national level. Its introduction created the need for a comprehensive database of occupational employment by industry. At that time, the decennial census was the only source of such data. (Early efforts in industry/occupational employment matrix development used "manning" tables developed during World War II.) At the request of the BLS, the Department of Defense (USAF) provided the resources for the purchase of the first special tabulation of occupation by industry employment data from the 1950 decennial census. Similar special tabulations also were purchased from the 1960, 1970, and 1980 censuses. Resources for the purchase of the 1960 and 1970 data were provided by the Employment and Training Administration and, in 1980, by NOICC and BLS.

In 1970 and 1980, the occupation by industry employment tabulations were expanded to include states and standard metropolitan statistical areas (SMSAs) with a population of over 250,000 persons.

As indicated above, the 1950 and 1960 data provided the database needed to develop a *national* industry/occupational matrix and *national* projections of occupational employment. The census data formed the *primary* database, with other sources of occupational employment information, such as the Survey of Scientific and Technical Personnel, used to supplement the census data.

The 1970 census data were used by BLS for the development of the National/State Industry/Occupation Matrix System. This system was the first large scale effort to develop industry/occupational employment tables and projections for individual states and major metropolitan areas. During the 1970s, the census-based matrix system was the primary process used by state employment security agencies to develop occupational demand projections.

During the late 1970s and early 1980s, a growing number of states shifted from a census-based matrix system to an OES-based matrix system. With this development, the role of census employment data also shifted, from the primary source to the secondary source of occupation by industry employment data. For example, as the secondary source of data, the 1980 census special tabulations were widely used for occupational employment estimates in areas not covered by the OES, such as the number of self-employed and unpaid family workers. Census data also were used to estimate employment in industry sectors such as agriculture, forestry and fisheries, and private households.

Since the introduction of the OES, census data have been used to distribute employment in occupational residual categories and OES collapsed or combined occupations. These occur in industries where the occupation accounts for a minor share of the industry's employment but, at the same time, may account for an important share of employment in the occupation.

The microcomputer matrix system, funded by NOICC and developed by the Utah SESA with technical support from the Interstate Conference of Employment Security Agencies and NOICC, automatically accomplishes these supplemental tasks. However, it requires the census data to do so. The lack of similar 1990 census data would result in less employment coverage and a poorer quality set of occupational projections. Lack of census input data would also require major revisions to the basic microcomputer matrix system.

Based on discussions with federal and state agency staff, the author concluded that priority for 1990 census data be assigned to obtaining tabulations on detailed occupational employment by detailed industry and class of worker.

B. Occupation of the Employed by Age and Sex

On the average, the need to replace workers who leave the labor force accounts for two out of every three job openings that will occur in any given decade. In some states, where employment growth is below the national average, this figure is even higher. Data on the age and sex of workers in specific occupations are essential in developing labor force replacement rates by occupation. Presently, the most comprehensive data on age and sex for states are available from the decennial census. Special tabulations of these data from both the 1970 and 1980 censuses were obtained and used to develop occupational replacement rates for each state.

During the discussions with national and state staffs, all strongly agreed that these data again be obtained from the 1990 census. A working life table available from BLS, together with employment data by 5-year age intervals and by sex, will make it possible to calculate new state labor force separation rates by detailed census occupation.

Other OIS-Related Data

The following data from the census may be needed for developing or updating state occupational information systems.

A. Earnings Data by Occupation

Earnings data by occupation are of great importance to occupational and career information delivery systems. As collected by the census, these data refer to income earned in the previous year, i.e. in the 1990 census, the reference period for the earnings data is 1989. The use of the previous year's earnings reduces the usefulness of these data because a relationship between earnings and current occupation cannot be established. For example, the respondent may have worked in another occupation in the previous year or been a student or unemployed part of the year (see Attachment, *1990 Census Questionnaire*, questions 32 and 33). In addition, state staffs noted that 1989 earnings data would not be available until 1993 and would already be out-of-date. For these reasons, there was little national or state support for obtaining earnings data by occupation from the 1990 decennial census.

B. Occupation of the Employed by Race

The 1990 census collected data on many racial categories (see Attachment, question 4). Census Bureau staff indicated that information on the occupation of the employed by sex and race was among the most frequently requested information from the 1980 census. There is wide interest in these data among state staff as well. They also need occupational employment data cross-classified by industry. State personnel, especially those from the employment security agencies and the census data centers, all considered data on occupation of the employed by race a high priority item. They stated that many employers request these data for use in responding to the legal requirements of Equal

Employment Opportunity legislation. Although state staff consider these data to be important, those consulted see them as a supplement to their OIS. The SOICCs did urge NOICC support to insure these data are available to the state census data centers.

C. Occupation of the Employed by Level of Education

Data on the occupation of the employed by level of education were collected by the 1990 census (see Attachment, question 12). A special publication of these data was prepared from the 1980 census, with the data cross-classified by age. In interviews, state staff expressed little interest in these data. It appeared that little or no use had been made of the 1980 information. Most stated that because these data represented all workers in an occupation, they did not reflect the level of education needed by new entrants. Even when the cross-classification by age was brought to their attention, none supported a special effort to obtain this information.

It should be noted, however, that no representatives of the education community were among those interviewed. NOICC may want to examine the potential applications of these data and to explore their use in the education community and elsewhere before deciding whether these data should be included in a request for special reports from the Census.

D. Geographic Mobility Data by Occupation

Two major undeveloped sources of occupational employment demand and supply information are the movement of workers from one occupation to another and from one geographic area to another. By moving, workers potentially create a replacement need in the area they leave and increase the supply of available workers in the occupation and/or geographic area where they move. These movements appear to vary significantly by occupation and geographic area. For example, worker movement through a career ladder may provide a major source of supply to many skilled occupations. Similarly, some areas of the country have traditionally experienced substantial in-migration of workers while others at the same time experienced out-migration. Such movements can have a significant impact on net occupational demand for an occupation in a specific geographic location and have major implications on educational planning.

In 1980, several special tabulations on geographic migration by occupation were obtained from the census. Apparently, little or no use was made of these data. In fact, many states were not even aware of the existence of the data tapes. Presently, copies of the tapes are stored at the National Crosswalk Service Center and are available upon request for a small copying fee.

In the 1990 census, data relating to geographical mobility are again being collected and tabulated (see Attachment, question 14). Most persons interviewed recognized their importance. However, it seems unlikely that individual states have the resources to undertake the research effort needed to explore their use properly. (For a number of

years, BLS has been using the CPS to measure movement of workers between occupations.) Relatively little research has been directed toward the measurement and use of data on the occupations of workers migrating to another geographic location and the resulting impact on occupational supply.

The measurement of this movement, its impact on occupational supply, and how such data may be used in occupational information systems may be fruitful areas for a NOICC research effort. If undertaken, data from both the 1980 and 1990 censuses on migrating workers may be of value. Both occupational and geographic mobility are potential information areas that warrant further research.

3. 1990 Census Bureau Plans for Collecting, Tabulating, and Distributing Occupational Data

For many decades, the decennial census has been the principal source of comprehensive information on the occupations of the employed. In addition, it remains the major source of information on the characteristics of persons employed in these occupations. The 1990 census will continue to be a major source of these data.

Currently, the Census Bureau has completed most of the tabulation and publication plans for the 1990 census, and major revisions to its publication plans appear unlikely. Its plans for the collection, tabulation, and release of occupational information from the 1990 census are summarized below. Plans are presented for four areas: (1) General Collection and Classification Plans; (2) Printed Reports; (3) Subject Reports and Summary Tape Files; and (4) Special Computer Tape Files.

General Collection and Classification Plans

Generally, the questions asked of the respondents and the occupation and industry classifications in the 1990 census are very similar to those used in the 1980 census. The employment concept (persons age 16+) will continue to be used. Standard employment tabulations will be based on "place of residence". As in 1980, occupation and industry data were collected on the long form (17 percent sample).

The industry, occupation, and class of worker questions are the same as those asked in the 1980 census. These questions are shown on the attached questionnaire (see Attachment, questions 28-30).

The industry classification will continue to follow the Standard Industrial Classification (SIC). The industry categories for the 1990 census are similar to those used in 1980. The 1987 revisions to the SIC were introduced into the 1990 census classification. The most significant change resulting from the SIC revision is that business management and commercial research labs were moved from the "Business and repair services" major group to "Professional and related services".

The occupational classification system is essentially the same as that used in the 1980 census. The 1990 census occupational classifications are based on the 1980 Standard Occupational Classification. A few minor changes have been introduced into the 1990 occupational classification. Most involve the simple combination of two 1980 occupations or the addition of a new occupation. The combinations generally resulted from the inability of the Census Bureau to distinguish between similar occupations when classifying job titles. For example, 1980 census "805 Truck drivers, light" has been

combined with "804 Truck drivers" in the 1990 census. In addition, four occupational categories have been added to the 1990 system: Managers, food serving and lodging establishments; Managers, service organizations, n.e.c.; Family child care providers; and Early childhood teacher's assistants. Again, it should be stressed that such changes were very limited and, overall, the 1990 occupational categories are nearly identical to the 1980 system.

Printed Reports

The following sections compare 1980 printed census reports that included occupational information with those for the 1990 census. For a more detailed presentation on data to be published from the 1990 census, see: *1990 Census of Population and Housing; Tabulation and Publication Program*, published by and available from the Bureau of the Census. In 1980, two basic census reports that provided occupational information were published:

A. *General Social and Economic Characteristics, PC80-1-C, (STF-4)*

In 1980, this report provided information on a wide range of social and economic characteristics of the population. Importantly, the report included such information for the state, SMSAs, counties, and other areas of small population (2,500 and over). However, the data were only shown for highly aggregated occupational categories. For example, at the state and SMSA level, fewer than 50 occupational categories were shown. For counties and small areas, employment was only shown for major occupational groups. Some additional occupational detail was available on a tape (STF-4) covering these data. For example, at the state and SMSA levels, the tape covered 70 occupations.

B. *Detailed Population Characteristics, PC80-1-C, (STF-5)*

This report covered a variety of social and economic characteristics. The population characteristics shown were in more detail than those available in the STF-4 file or report, but the geographic coverage was limited to the states and SMSAs of over 250,000 population.

The occupational coverage (the full 503 occupations) in this report was the most complete of any published state census report. The following tables for the state and SMSAs of over 250,000 population were included:

Table 217. Detailed Occupation of the Experienced Civilian Labor Force and Employed Persons by Sex: 1980 and 1970 (state)

Table 218. Detailed Occupation of Experienced Civilian Labor Force by Sex, Race, and Spanish Origin: 1980 (state, rural)

Table 219. Detailed Occupation of Employed Persons by Sex, Race, and Spanish Origin: 1980 (state, rural, SMSAs of 250,000 or more)

Table 220. Occupation of Employed Persons by Class of Worker, Hours Worked, Sex, Race, and Spanish Origin: 1980 (state, SMSAs of 250,000 or more)

Table 221. Occupation of Employed Persons by Age, Sex, Race, and Spanish Origin: 1980 (state, SMSAs of 250,000 or more)

Table 222. Occupation of Experienced Civilian Labor Force by Earnings in 1979, Labor Force Status in 1979, Sex, Race, and Spanish Origin: 1980 (state, SMSAs of 250,000 or more)

Table 223. Occupation of Employed Persons by Years of School Completed, Race, Spanish Origin, and Sex: 1980 (state)

Table 224. Occupation of Employed Persons by Industry: 1980 (state)

Table 225. Occupation of Employed Persons by Industry, Sex, Race, and Spanish Origin: 1980 (state)

In addition to the published reports, these data were available on computer tape (STF-5).

C. Planned 1990 Census Printed Reports

Some of the publications presenting state and area data will be the same as those available in 1980. For example, the subject content and geographic coverage of the report, *General Social and Economic Characteristics*, will remain the same as that published in 1980. However, Census Bureau plans call for a significant reduction in its regularly scheduled program for publishing occupational and other data for states and MSAs. This reduction will not only stop publication, but also eliminate the support computer tapes that were available from previous censuses. For example, there are no plans to publish the report, *Detailed Population Characteristics*. In addition, Census Bureau staff stated that these data will not be available on computer tape or disk as part of the Census Bureau's regularly scheduled program. The reason expressed was that they found little support for continuing this report, since many of these data *may* be produced as part of the subject reports and/or special computer tape files. As a result, the Census Bureau decided to eliminate this publication from its 1990 plans.

Planned 1990 Census Subject Reports and Summary Tape Files

Historically, the Census Bureau has produced a number of subject reports. In the occupational area, they have included special publications such as "Occupational Characteristics", "Earnings by Occupation and Education", and "Occupation by Industry". These publications normally included only national data. In 1980, the number of these reports was reduced substantially because of resource limitations.

The preparation of subject reports will continue from the 1990 census. At this time, the Bureau plans to publish subject reports on "Occupational Characteristics", "Occupation by Industry", "Earnings and Education", and "Industrial Characteristics". If prepared, the printed reports would only include national data. However, Census Bureau staff indicated that the resulting tapes *may* include some state data. They also indicated that the development of subject reports will depend upon the availability of funds.

Special Computer Tape Files

The Census Bureau plans to produce and release several special computer tape files to meet user needs. However, Bureau staff stated that if special tapes were prepared, they were unlikely to include occupational employment data, especially below the national level.

The Census Bureau will also produce other special tabulations at the request of users, if resources are provided. In the early 1980s, NOICC and the BLS purchased special tabulations from the 1980 census. Two of these special tabulations, (1) Occupational Employment by Industry, Class of Worker, and Sex (U.S. total, state, and SMSA) and (2) Occupational Employment by Age and Sex (U.S. total, state, and SMSA), were widely used to supplement the OES in the preparation of national, state, and SMSA projections of occupational employment.

Another major set of special computer tapes developed from the 1980 census was prepared for the Equal Employment Opportunity Commission (EEOC). These data were widely used by a variety of federal, state, and local government agencies and private industry. For example, the Employment and Training Administration, U.S. Department of Labor, used these special tapes in the preparation of special tabulations produced by the Lawrence Berkeley Laboratory for use in planning Job Training Partnership Act programs.

Special EEO tapes are already planned from the 1990 census. One, "Detailed Occupation by Sex and Race", will provide total occupational employment for states, MSAs, and counties. These data should be available for OIS use. Staff at the Census Bureau and EEOC are presently seeking funding sources to assist in the development of additional special tapes. Most of the proposed EEO tapes contain far more detail than is needed for OIS use.

4. Conclusions and Recommendations

From discussions held during this study, the author identified areas where occupational data from the 1990 census are most needed. The findings are summarized below and recommendations for NOICC action are presented, according to their priority for OIS needs.

Top Priority Data Elements

A. Detailed Occupation of Employed Persons by Detailed Industry and Class of Worker (national, states, territories, and MSAs with a population of over 250,000)

The availability of detailed occupational employment data by detailed industry and class of worker categories has been essential for the preparation of employment demand projections by state and major labor market areas. The projection procedures presently used by states require census data to: (1) assist in developing comprehensive cross-industry employment estimates for all occupations and (2) develop occupational employment estimates in selected industry sectors, e.g. agriculture, and class of worker categories, e.g. self-employed. These data are needed for the development and operation of the microcomputer industry/occupational employment matrix system. Without their availability, the quality of the employment estimates will be compromised, and modifications to the present projection system may be needed. BLS staff also expressed a need for obtaining occupation of the employed by industry and class of worker tabulation (U.S. total) from the 1990 census.

EEOC also may request special tabulations that include occupational employment by industry. However, its proposed file goes far beyond OIS needs. For example, it requests more geographic and race/ethnic detail than would be reasonable for OIS use. Data by "class of worker" are not included in the EEOC's proposed tabulation. Thus, while the EEOC request goes far beyond OIS needs in some areas, it does not provide essential data in others. NOICC is participating with EEOC in a work group that is exploring the census data needs of a number of agencies. Such coordination may help the NOICC/SOICC Network to obtain considerably more information from the 1990 census at lower costs and in a shorter period of time.

> *Recommendation*: NOICC, working closely with BLS, should provide resources for a special tabulation that includes occupation (full detail) of employed persons by industry (full detail), by class of worker, for all states and MSAs with a population of 250,000 and over. (Similar data for the territories should also be included in the request.) These data are essential if the state and area occupational employment projections program is to continue as presently structured.

The development of specifications for this special tabulation should be carefully coordinated with the BLS and Utah State Employment Security Agency to insure that all the needs of the microcomputer matrix processing system are met. Some of the special tabulations data by class of worker ordered in 1980 were not used. Some cost savings might be realized if the data requested were limited to that presently being used in the projection process.

However, in making this decision, there may be other considerations. It may be worthwhile to obtain data by all classes of worker, rather than just those currently used in the projections process, if the additional cost is small. These data may be useful for potential changes in the projections process and for comparisons with 1970 and 1980 data. The addition of 1990 tabulations may form a potentially important research database. For example, if one wished to examine the changes in the growth (or decline) of self-employment of skilled workers in the construction industry, these data would be necessary.

It may be useful for NOICC to ask the SOICCs to comment on this issue before ordering special reports from the Bureau of the Census. The conclusions of this report are that the full tabulation of occupation by industry and class of worker and sex should be obtained. BLS needs the government detail, at least at the national level, and the continued accumulation of a potentially important database outweighs any minor cost savings.

B. Occupation of Employed Persons by Age and Sex for States and Territories

This is also a high priority item. These data are needed to develop state-specific separation rates by occupation. Nationally, labor force separations account for approximately two-thirds of total job openings. For states with employment growth below the national average, labor force separations are an even more important source of job openings.

> *Recommendation*: NOICC should make every effort to provide the resources needed to obtain a special tabulation of these data from the Census Bureau. This tabulation should include the occupation (full detail) of the employed by age and sex.

Some consideration should be given to obtaining these data for large MSAs where the age structure may vary from the state average. Some research in this area may be warranted. Also, research using changes in the age structure (cohort analysis) could prove very valuable.

C. Occupation (full detail) of Employed Persons, by State, Territory, and MSA

States expressed great interest in obtaining occupational employment for the state and *all MSAs*. Most of these data will result from the first recommendation (and from the

EEOC's proposed tabulations). Special efforts should be made to insure that as much occupational employment data as possible are obtained for the territories.

> *Recommendation*: Item A (above) will provide these data for the state and for MSAs with a population of over 250,000. All these data may be available from the special EEO files. If the EEO files are not produced, an effort should be made to obtain these data for MSAs with a population of between 50,000 and 250,000 and for all territories.

D. Occupation of Employed Persons by Industry and Race

While states do not include these data as a formal part of their OIS, all reported a high level of interest in obtaining occupation of the employed by industry and race. Past and currently proposed EEO tabulations have focused on "civilian labor force" (employed and unemployed), rather than "employed". This occurred because these data were used to measure the "pool" of minority workers available for work.

> *Recommendation*: These data should be available from the EEOC files. NOICC should encourage their development and alert SOICCs to their availability.

Medium Priority Data Elements

A. Occupation of the Employed by Employment Status and Place of Residence in 1985

Employed persons who move to another state or another labor market within the same state create a replacement demand for their occupation in the geographic area they leave and potentially increase supply for that occupation in the area they enter. Up to this time, little effort has been made to integrate such information into the OIS. Special tabulations of these data were obtained from the 1980 census but remained largely unused.

> *Recommendation*: NOICC may wish to conduct some basic research to better understand these movements and how to integrate these data successfully into the OIS before ordering these special files.

These data *could* prove valuable, but much more needs to be known concerning these workers and their impact on the community they leave and the one where they migrate. An option may be for NOICC to request a cost estimate for producing these data. If reasonable, NOICC could proceed to obtain the entire file. If not, research could be conducted using the existing 1980 files. If the research proves successful, then steps could be taken to reconsider the purchase of 1990 data.

Low Priority Data Elements

A. Occupation (1990) of the Employed by Income in 1989

States showed little interest in these data. A number of serious problems reduce their value. For example, the earnings data relate to the individuals' earnings in the previous year, when they may not have been employed in their 1990 occupation. In addition, these data would be 3 years old when available and already out-of-date. Therefore, no resources should be provided to obtain these data.

B. Occupation of Employed Workers by Level of Education

Little interest was expressed in these data. The consensus was that entry level education and training requirements were much more important than the average education of those already employed in the occupation. Special skills are another important factor that these data do not address. None of those interviewed supported expending resources to obtain these data.

Nonetheless, further consideration of the applications of these data may be warranted, especially within the education community, which was not consulted for this report. NOICC staff also saw potential applications, particularly if age detail is included in the tabulations. For example, with age added, the data may be useful in identifying entry level requirements.

C. Occupation of the Employed by Hours of Work

No SOICC felt that there was an important use for these data in an OIS. Given the lack of support, no resources should be provided to obtain these data.

Other Recommendations for NOICC

Other important actions should be taken to insure the timely and appropriate use of 1990 census data. First, to insure the timely availability of these data, a central facility, such as the National Crosswalk Service Center, should be identified and provided resources to receive and store any special computer tapes obtained. This location would be responsible for duplicating, distributing, and otherwise preparing the tapes for use by the respective states.

Once a decision is made to provide resources for one or more special tabulations, a request should be transmitted quickly to the Census Bureau. The Bureau will process requests in the order in which they are received. Presently, 1993 is the earliest date such requests (except for the EEO files) are being scheduled for delivery.

Finally, NOICC should continue to work actively with the EEOC and other organizations to coordinate census data requests. Potentially, this activity could result

in additional data being made available at an earlier date with little or no additional costs. However, care should be taken to insure that the high priority NOICC/SOICC data needs are met.

Other LMI Needs from the 1990 Census

During the course of this project, it became clear that the labor market information (LMI) community had a strong interest in Census Bureau plans for releasing data from the 1990 census. In addition, many in the LMI community felt that the Bureau would continue to provide the same data it had in the past. However, this project's limited look at these information fields raises some serious questions in this regard. *Detailed Population Characteristics* alone was an important information source. It seems clear that significantly less data will be available through Census Bureau publications and standard tape files than were available in 1980.

Representatives of the potential user community, through the National Governors' Association, Interstate Conference of Employment Security Agencies, NOICC, and other appropriate organizations should carefully examine this issue to insure that essential data are available to the appropriate state agencies. Their review will be particularly important in identifying needs that will not be met by census standard or subject reports. If the review can identify special needs that are common among a number of user groups, the cost of preparing the data might be shared and the processing become more cost effective and efficient.

Abbreviations

BLS	Bureau of Labor Statistics
CPS	Current Population Survey
EEO	Equal employment opportunity
EEOC	Equal Employment Opportunity Commission
LMI	Labor market information
MSA	Metropolitan statistical area
NOICC	National Occupational Information Coordinating Committee
OES	Occupational Employment Survey
OIS	Occupational information system
SESA	State employment security agency
SIC	Standard Industrial Classification
SOICC	State occupational information coordinating committee
USAF	United States Air Force
USAID	United States Agency for International Development

NOICC Training Support Center

The NOICC Training Support Center (NTSC) coordinates training programs and conferences for the National Occupational Information Coordinating Committee. Established in 1988 through the Oregon Occupational Information Coordinating Committee, the Center enhances the NOICC/SOICC Network's training capabilities. It provides materials and a pool of experienced trainers and resource persons for Network programs and conferences. The Center's services to NOICC include product development, communication and coordination, and training and technical support for the Network.

The NTSC uses the expertise of three cooperating Oregon agencies to provide the most effective training support services. These organizations are the Education and Work Program of the Northwest Regional Educational Laboratory in Portland, the Office of Continuing Higher Education at Oregon State University in Corvallis, and the Oregon Occupational Information Coordinating Committee in Salem.

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